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Pinus pungens has a varying appearance depending on density of growth. Where the trees grow thickly they are tall, straight, and slender, having but few living branches, except near the top. Quite the contrary when they grow far apart. The trees then present a straggling look, drooping branches loaded with cones, running out 15 feet or more, the extremities of the lower ones often touching the ground.

The cones are quite distinctive. They are ovate-conical, fascicled around the branches in clusters of three to seven, $3\frac{1}{2}$ to 4 inches long, armed with stout spines, which are, from the middle of the cone upward, *incurved*, and from the middle downward, *recurved*. The leaves are stout, 2 to 3 inches long, sometimes shorter, with short sheaths on mature foliage. The sheaths, however, on young leaves about $\frac{1}{2}$ inch long. G. N. BEST.

ROSEMONT, N. J., June 14th, 1886.

Notes on Starch in the Chestnut Wood.

I wish to add a note to my communication of last month in regard to the starch grains in chestnut wood.

June 1st I cut a branch from a tree on the Boston and Albany Railroad, near the Massachusetts and New York State line, at an elevation of 950 feet above the sea. The aments of the chestnut trees then were just appearing; the leaves gave to the trees a dense foliage.

Only a few of the upright starch-carrying cells in the fifth and sixth rings from the bark still contained starch grains. The medullary rays in the alburnum and in the bark did not give a trace, nor were any found in any of the cells of the bark. In chestnut trees at less elevations probably this change had taken place before this date, as the aments on the trees in the eastern portion of the State were much further advanced. The only timber of chestnut generally seen now in Massachusetts is of second growth, and along the line of the railroad mentioned I did not see any above 1,000 feet of elevation.

So little is known in regard to the periods when different trees store starch and then transform it, that I trust many other observers in different sections of the country will give the result of investigations in this respect. It is a matter not only of great scientific

interest, but of great practical importance in regard to the cutting of timber.

When the starch is naturally transforming, or is transformed, it is a good media in most woods, if exposed, for the growth of various ferments and moulds—in short, fungi, which hasten the decay of the sap-wood at least.

P. H. DUDLEY.

Index to Recent American Botanical Literature.

Agave Americana. (Gard. Month., xxviii, p. 171.)

We are informed that a century plant is about coming into flower in the garden of Mr. George Casey, at Auburn, N. Y.

Algo-Lichen Hypothesis.—*A Résumé of the.* F. H. Knowlton. (Amer. Month. Micros. Journ., vii., pp. 101–105.)

In a paper read before the Biological Society of Washington, Mr. Knowlton discusses the hypothesis of the compound nature of lichens advanced by Schwendener in 1868, and since elaborated by other botanists, and concludes with Rev. J. M. Crombie that the evidence thus far adduced is insufficient to warrant its acceptance.

Arctostaphylos—*Notes on the United States Pacific Coast Species.* C. C. Parry. (Proc. Davenport Acad. Nat. Sci., iv., pp. 31–37.)

Arctic Algæ—*Notes on*; based principally on collections made at Ungava Bay by L. M. Turner, in 1884. W. G. Farlow. (Proc. Amer. Acad. Arts and Sci., xxi., pp. 470, 471.)

The collections contain a number of Florideæ which are seldom seen in herbaria. 150 specimens of *Delesseria* were collected which tend to show that *D. corymbosa* and *D. Bærii* are but one species.

Chorizanthe.—*A Revision of the Genus.* C. C. Parry. (Proc. Davenport Acad. Nat. Sci., iv., pp. 45–65.)

Conifers.—*Contributions to the History of Certain Species of.* Maxwell T. Masters. (Journ. Linn. Soc., xxii., pp. 169–212, plates II–X and woodcuts.)

Those who are specially interested in this group will find much to attract them in this article, illustrated as it is on almost